



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/523,609

11/10/2005

Raphael Yoeli

MJK-4843-13

1497

23117 7590 12/17/2008
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

SANDERSON, JOSEPH W

ART UNIT

PAPER NUMBER

3644

MAIL DATE

DELIVERY MODE

12/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,609	Applicant(s) YOELI, RAPHAEL	
	Examiner Joseph W. Sanderson	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-11 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/19/08</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3644

DETAILED ACTION

Response to Amendment

1. Claims 9 and 10 have incorrect status identifiers. Although the examiner waives this requirement for this action, as with the last, any future correspondence with such will be marked as non-compliant.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hulbert (US 2 955 780) in view of Piasecki (US 3 184 183).

Regarding independent claim 6:

Hulbert discloses a VTOL vehicle comprising:

a fuselage (Fig 1, 10) having a longitudinal axis (fore to aft) and a transverse axis (side to side);

at least one lift-producing propeller (Fig 3, 23 and 23') carried by said fuselage on each side of said transverse axis;

Art Unit: 3644

a pilot's cockpit (Fig 1, 16 on the port side, with controls) formed in said fuselage between said lift-producing propellers laterally offset to one side of the longitudinal axis (as seen in Fig 1); and

at least one payload bay (Fig 1, 16 in center and starboard) formed in said fuselage between said lift-producing propellers and accessible from an opposite side of said longitudinal axis, but wherein said payload bay extends within said fuselage to said one side of said longitudinal axis (center 16 extends across longitudinal axis), rendering the pilot's compartment and the at least one payload bay asymmetrical with respect to the longitudinal axis.

Hulbert discloses an engine (Figs 3 and 5, 27) capable of driving the propellers, but does not disclose at least two engines.

Piasecki teaches a VTOL vehicle comprising "one or more engines" (col 2, lines 43-46), specifically two engines (Fig 2, 21 and 21a), each capable of driving said lift-producing propellers.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Hulbert to use at least two engines as taught by Piasecki as providing multiple engines is an art-recognized alternative means for driving rotors, and to further provide a back-up in the event one fails.

Hulbert as modified renders a plurality of vanes extending across the air inlets in a transverse direction, but does not render vanes oriented longitudinally.

Hulbert teaches orienting vanes longitudinally (50).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Hulbert to use longitudinally oriented vanes as

Art Unit: 3644

taught by Hulbert as this is merely a well-known functional equivalent orientation for predictably straightening the incoming airflow, with the added advantage of decreasing drag caused by the vanes while in forward flight.

Regarding claim 13:

The discussion above regarding claim 6 is relied upon.

Hulbert as modified renders the at least one payload bay as a passenger compartment (a passenger may sit at least in the starboard compartment 16).

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hulbert ('780) in view of Piasecki ('183) as applied to claim 6 above, and further in view of Bucher (US 6 254 032).

Hulbert discloses a VTOL vehicle comprising at least one payload bay, but does not disclose a cover for supporting at least a portion of a payload when in the open position.

Bucher teaches a VTOL vehicle having a payload bay including a support (the stairway or ramp that defines 11; as depicted, 11 is a stairway, with each transverse line indicating a step), specifically a cover (it covers the entrance aperture), extendable between open and closed positions (to allow passengers on/off) and wherein in said open position, provides support for at least a portion of the payload, externally of the fuselage (passengers walk on it to enter/exit the vehicle).

Art Unit: 3644

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Hulbert to use a staircase/cover as taught by Bucher for the well known predictable advantages of providing cover for the occupants when closed and facilitating entry and exit when open.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piasecki ('183) in view of Hulbert ('780).

Regarding independent claim 6:

Piasecki discloses a VTOL vehicle comprising:

a fuselage (Fig 1, 11) having a longitudinal axis (fore to aft) and a transverse axis (side to side);

at least one lift-producing propeller (Fig 1, 15 and 16) carried by said fuselage on each side of said transverse axis;

a pilot's compartment (2, 12a with controls as variously shown within the figures) formed in said fuselage between said lift-producing propellers laterally offset to one side of the longitudinal axis (as seen in Fig 2); and

at least one payload bay (Fig 2, other 12a) formed in said fuselage between said lift-producing propellers and accessible from an opposite side of said longitudinal axis; and

at least two engines (Fig 2, 21 and 21a), each capable of driving said lift-producing propellers.

Art Unit: 3644

Piasecki does not disclose the at least one payload bay extending within said fuselage to said one side of said longitudinal axis, although appears to disclose a similar second payload bay in Figs 2 and 8 to the center bay disclosed in Hulbert.

Hulbert discloses at least one payload bay (center and starboard 16) extending from one side and across the longitudinal axis.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Piasecki to use the extended payload bays as taught by Hulbert for the well known and predictable result of increasing the amount of storage space the vehicle has to transport payloads.

Piasecki as modified does not render transversely-spaced vanes oriented longitudinally across the inlets.

Hulbert teaches providing vanes across the air inlets (53) to straighten the airflow, and orienting vanes longitudinally (50).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Hulbert to use longitudinally oriented vanes as taught by Hulbert for the well-known advantage of straightening the incoming airflow, and decreasing drag caused by the vanes while in forward flight.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piasecki ('183) in view of Hulbert ('780) as applied to claim 6 above, and further in view of Illingworth (US 6 520 449).

Art Unit: 3644

The discussion above regarding claim 6 is relied upon.

Piasecki as modified renders a VTOL vehicle comprising a skirt made of rigid panels (as seen in various forms in Figs 9-11), but does not disclose a flexible skirt.

Illingworth teaches as prior art a VTOL vehicle comprising a flexible skirt (as seen in Figs 3 and 4) to more successfully seal the static pressure region and improve the efficiency of the system (col 15, lines 8-10).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Piasecki to use a flexible skirt as taught by Illingworth for the well known advantage of improving the efficiency of the system at least when close to the ground, i.e. during take-offs and landings.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hulbert ('780) in view of Piasecki ('183), or vice versa.

Hulbert or Piasecki as modified by the other render ducted fan vehicles having passenger compartments, but do not disclose the compartments including at least one outward facing seat.

It would have been an obvious matter of design choice to use outward-facing seats, since applicant has not disclosed that this configuration solves any stated problem or is for any particular purpose (as evidenced by Figs 14b-e) and it appears that the invention would perform equally as well with the seats of the noted art.

Further, it is well documented that side facing seats are alternatives to forward or rear facing seats. For example, helicopter gunners during the Vietnam War faced outward to

Art Unit: 3644

adequately fire from the vehicle, and some subway systems, such as the New York subway, use side facing seats to provide more room to carry more passengers.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hulbert ('780) in view of Piasecki ('183), or vice versa as applied to claim 6 above, and further in view of the De Lorean DMC-12, first produced in 1981 (images available from Wikipedia, http://en.wikipedia.org/wiki/De_Lorean_DMC-12).

Hulbert or Piasecki as modified by the other render vehicles having payload bays, but do not render covers for the payload bays hinged on the same side as the fuselage.

The De Lorean DMC-12 teaches covers for payload bays (seating areas) hinging on the far side from the opening of the payload bay (as seen in the provided image).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Hulbert or Piasecki to hinge covers on the far side of the payload bays from the openings as taught by the De Lorean DMC-12 for the well known advantage of lessening the amount of side clearance needed for entry and exit (since the doors do not swing outward to the side, but upward).

Since the at least one payload bays of Hulbert and Piasecki extend beyond the longitudinal axis, hinging the covers at the far side would create a hinge on the pilot's side of the craft.

Art Unit: 3644

Response to Arguments

9. Applicant's arguments with respect to claims 6-11 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph W. Sanderson whose telephone number is (571)272-0474. The examiner can normally be reached on M-F 7:00 am - 2:30 pm.

Art Unit: 3644

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael R. Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph W. Sanderson

JWS

/Timothy D. Collins/
Primary Examiner, Art Unit 3643
For Michael Mansen